

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended): A method for operating a lithium ion secondary battery system comprising:

carrying out an intermittent power feeding in which a power feeding and a pause are repeatedly executed, when a lithium ion secondary battery is discharged with not less than a predetermined discharge rate to a discharge end voltage,

wherein said pause is executed for a period not less than the period required for the voltage of the lithium ion secondary battery to restore up to not less than 70% of an open circuit voltage after the lithium ion secondary battery is discharged until the voltage thereof reaches a the discharge end voltage, when the lithium ion secondary battery is discharged.

2. Canceled.

3. (Previously presented): The method for operating the lithium ion secondary battery system as set forth in claim 1, wherein an intermittent power feeding in which a power feeding and a pause are repeatedly executed, when a lithium ion secondary battery is charged with not less than a predetermined charge rate, wherein said pause is executed for a period not less than the period required for the voltage of the lithium ion secondary battery to go down by not less than 70% of a voltage difference between the open circuit voltage and the charge end voltage

after the lithium secondary battery is charged until the voltage thereof reaches the charge end voltage, when the lithium ion secondary battery is charged.

4. (Previously presented): The method for operating the lithium ion secondary battery system as set forth in claim 1, wherein said intermittent power feeding is carried out when the discharge rate is not less than 5C.

5. (Previously presented): The method for operating the lithium ion secondary battery system as set forth in claim 1, wherein the lithium ion secondary battery includes a positive active material having an average discharge potential to the lithium metal of not less than 4.5V.

6. (Previously presented): The method for operating the lithium ion secondary battery system as set forth in claim 1, wherein the lithium ion secondary battery is incorporated in a power supply device of an electric automobile or a hybrid automobile.

7. (Currently amended): A lithium ion secondary battery system comprising:
a lithium ion secondary battery; and
a control unit which carries out an intermittent power feeding in which a power feeding and a pause are repeatedly executed, when a lithium ion secondary battery is discharged with not less than a predetermined discharge rate to a discharge end voltage, and
wherein said control unit executes said pause for a period not less than the period required for the voltage of the lithium ion secondary battery to restore up to not less than 70% of an open circuit voltage.

8. (Previously presented): The lithium ion secondary battery system as set forth in claim 7, wherein said control unit executes said pause after the lithium ion secondary battery is discharged until the voltage thereof reaches the discharge end voltage, when the lithium ion secondary battery is discharged.

9. (Previously presented): The lithium ion secondary battery system as set forth in claim 7, further comprising a voltage measuring unit which measures a voltage of the lithium ion secondary battery, wherein an intermittent power feeding in which a power feeding and a pause are repeatedly executed, when a lithium ion secondary battery is charged with not less than a predetermined charge rate, wherein said control unit executes said pause for a period not less than the period required for the voltage of the lithium ion secondary battery go down by not less than 70% of a voltage difference between the open circuit voltage and the charge end voltage after the lithium secondary battery is charged until the voltage thereof reaches the charge end voltage, when the lithium ion secondary battery is charged.

10. (Previously presented): The lithium ion secondary battery system as set forth in claim 7, further comprising a detection unit which detects the discharge rate of the lithium ion secondary battery, wherein said control unit carries out said intermittent power feeding when the discharge rate of the lithium ion secondary battery is not less than 5C.

11. (Previously presented): The lithium ion secondary battery system as set forth in claim 7, wherein the lithium ion secondary battery includes a positive active material having an average discharge potential to the lithium metal of not less than 4.5V.

12. (Previously presented): The lithium ion secondary battery as set forth in claim 7, wherein the lithium ion secondary battery is incorporated in a power supply device of an electric automobile or a hybrid automobile.

13. (Previously presented): The method for operating the lithium ion secondary battery as set forth in claim 1, wherein an intermittent power feeding in which a power feeding and a pause are repeatedly executed, when a lithium ion secondary battery is charged with not less than a predetermined charge rate.

14. (Original): The method for operating the lithium ion secondary battery as set forth in claim 13, wherein said intermittent power feeding is carried out when the charge rate is not less than 5C.

15. (Previously presented): The lithium ion secondary battery system as set forth in claim 7, further comprising a detection unit which detects the charge rate of the lithium ion secondary battery, wherein said control unit carries out an intermittent power feeding in which a power feeding and a pause are repeatedly executed, when a lithium ion secondary battery is charged with not less than a predetermined charge rate.

16. (Original): The lithium ion secondary battery system as set forth in claim 15, further comprising a detection unit which detects the charge rate of the lithium ion secondary battery, wherein said control unit carries out said intermittent power feeding when the charge rate of the lithium ion secondary battery is not less than 5C.

17. (Currently amended): A method of operating a lithium ion secondary battery system comprising:

intermittently supplying power from the battery by repeatedly alternating a period of supplying power and a period of pausing the supplying of power when the battery is discharged at a rate equal to or greater than a predetermined discharge rate to a discharge end voltage,

wherein the period of pausing the supplying of power is equal to or greater than the period required for the battery voltage to restore to at least 70% of an open circuit battery voltage after the lithium ion secondary battery is discharged until the voltage thereof reaches ~~a~~ the discharge end voltage, when the lithium ion secondary battery is discharged.

18. (Previously presented): The method as set forth in claim 17, wherein power is intermittently supplied to the battery by repeatedly alternating a period of supplying power and a period of pausing the supplying of power when the battery is charged at a rate equal to or greater than a predetermined charge rate,

wherein the period of pausing the supplying of power is equal to or greater than the period required for the battery voltage to go down by at least 70% of a voltage difference between the open circuit voltage of the battery and a charge end voltage of the battery.

19. (Previously presented): The method as set forth in claim 17, wherein the predetermined discharge rate is equal to or greater than five time the nominal capacity of the battery.